

when all other vision in an eye seems to be lost, except perhaps that for light, we have a sign of value in suspected tumor of the pituitary gland. The sign may be of value when other signs of pituitary tumor are not conclusive.

The case to which I have just made reference shows that the field for motion exists independently of the other fields of form, light, color, in lesions of the optic tracts or chiasm as well as in lesions of the occipital lobe, but probably recognition of light is necessary for the proper recognition of motion. It shows that motion is probably the last form of vision to disappear, and is important in connection with Riddoch's statement that appreciation of movement returns before the object as such is recognized. His statement that light and movement are probably the most primitive of all visual percepts, and consequently they would be perceived first in a recovering blind field, explains also why motion is the last form of vision to disappear. Recognition of movement, as he says, is essential to animals both for hunting and for self-preservation; thus naturally it would have a wide field.

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## CONGENITAL DEXTROCARDIA.

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ANOMALIES of the heart, partly because of their infrequent occurrence and partly because of their occult manifestations, are of particular interest to the clinician. I have recently been afforded the opportunity of observing three cases of congenital dextrocardia. Two types of this anomaly are recognized: one associated with transposition of the abdominal viscera (*situs transversus*), and the other, in which the transposition affects only the heart and great vessels. At times<sup>3</sup> anomalous arrangement of the venae cavae permits the admixture of arterial and venous blood; this gives rise to a clinical picture simulating the syndrome of congenital heart disease.

Recalling the embryological development of the heart, it is readily seen how transposition of this organ occurs. The two primitive cardiac tubes fuse into one about the fifteenth day<sup>2</sup> and an auricular, ventricular and bulbar subdivision becomes evident (Fig. 1). The tube soon becomes bent on itself, which determines largely the future axis of the heart. In congenital transposition the primitive tube bends into a *contrasigmoid* (S) instead of the normal *sigmoid* (S) manner. This has been explained<sup>1</sup> by assuming that the embryo lies in an abnormal position within the chorion, so that its right side instead of its left lies closer to the blood supply. The three

patients whom I examined presented the most frequent anomaly, dextrocardia with *situs transversus*. In no instance was there any complaint referable to the abnormality.

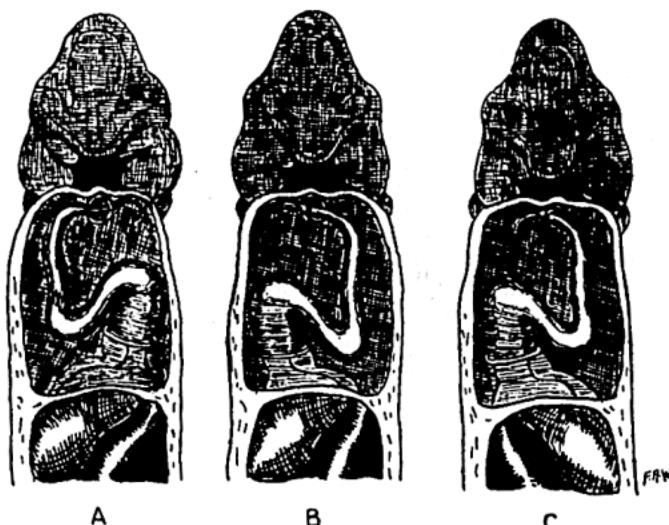


FIG. 1.—Transposition of the viscera in the embryo. *A*, normal; *B*, simple dextrocardia; *C*, complete *situs transversus*. Human embryo of about fifteen days. (After His.)

#### REPORT OF CASES.

**CASE I (222329).**—A woman, aged forty years, presented herself for examination complaining of chest pains of the intercostal

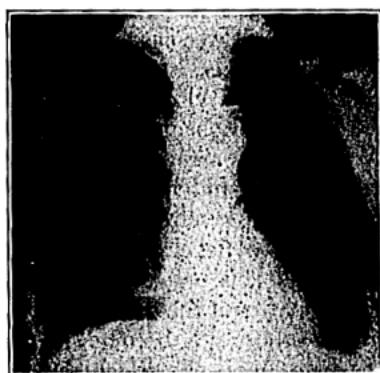


FIG. 2

neuralgic type. The apex-beat of the heart was palpable in the fifth right intercostal space 7.5 cm. from the midsternal line. The cardiac dulness extended 9.0 cm. to the right and 1.5 cm. to the left

of the midsternum. The heart sounds were best heard at the apex. Liver dulness was found to be on the left side and gastric tympany on the right. The systolic blood-pressure was 152, the diastolic was 90. Radiograms of the chest showed the dextrocardia and a trans-

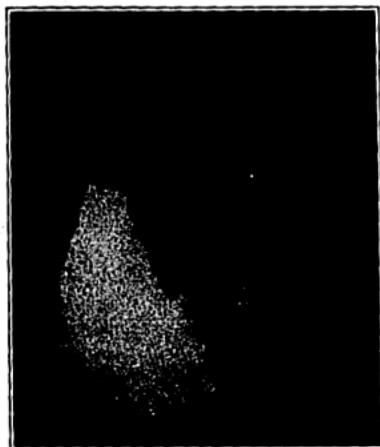


FIG. 3

position of the stomach and colon (fluoroscopic colon). The electrocardiogram showed the heart-rate to be 94. Complete inversion of Leads I and II. The amplitude of the *R* waves in Leads I and II exceeded those in Lead III by one-third (Figs. 2, 3 and 4).

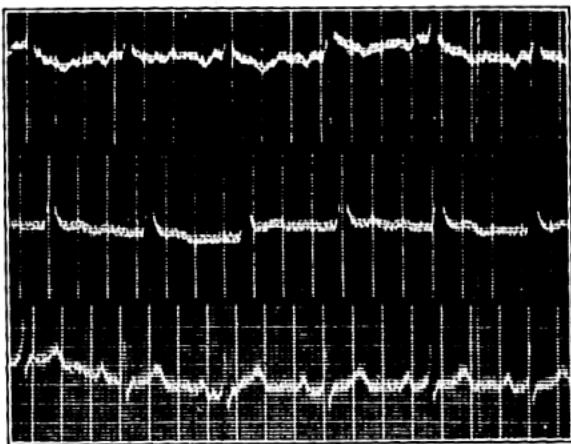


FIG. 4

**CASE II (224506).**—A woman, aged thirty-seven years, presented herself for examination on account of a pelvic complaint. The apex-beat of the heart was palpable in the sixth right intercostal space,

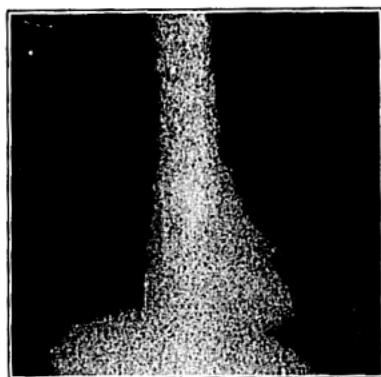


FIG. 5

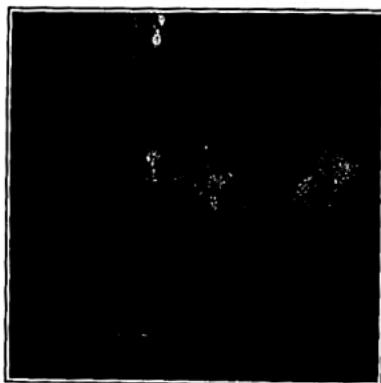


FIG. 6

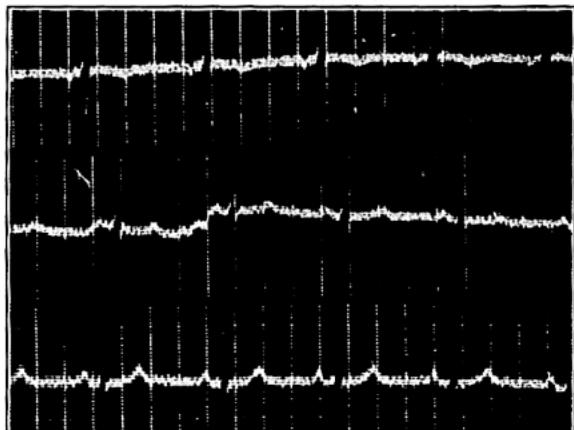


FIG. 7

9.0 cm. from the midsternal line. The cardiac dulness extended 11.0 cm. to the right of the midsternum. The heart sounds were best heard at the apex. Liver dulness was found on the left side and gastric tympany on the right. A bilateral salpingitis and a cyst of the left ovary were palpated. The systolic blood-pressure was 120, the diastolic was 75. The radiograms revealed dextrocardia and transposition of the stomach and colon (fluoroscopic colon). The electrocardiogram showed the heart-rate to be 75. There was complete inversion of Lead I. The amplitude of the *R* waves in Lead I were practically the same as those in Lead II and exceeded those in Lead III by slightly more than a third (Figs. 5, 6 and 7).

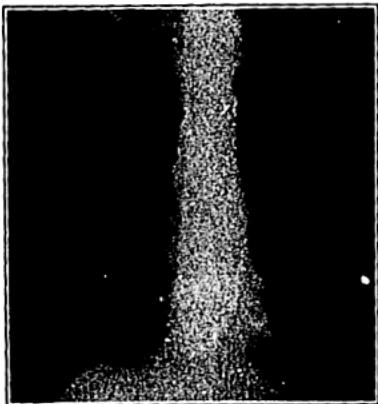


FIG. 8

**CASE III (238633).**—A woman, aged thirty-three years, presented herself for examination on account of goitre. The heart, as in the other cases, was found to be on the right side. The liver dulness was found on the left side and the gastric tympany on the right. The patient had a single adenoma of the right lobe of the thyroid 4.0 by 4.5 cm. The systolic blood-pressure was 112, the diastolic was 78. The radiogram revealed dextrocardia and transposition of the colon. The electrocardiogram showed the heart-rate to be 115; there was complete inversion of Lead I, and the amplitude of the *R* waves in Lead I were diminished to about one-half those of Lead III. The amplitude of the *R* waves in Lead III slightly exceeded those in Lead II. There was evidence of left ventricular preponderance (Figs. 8, 9 and 10).

The electrocardiograms of the last two cases essentially confirm the findings recorded in previous publications.<sup>4 5 7 8</sup> Lead I shows a complete inversion of all the deflections. Fig. 11 illustrates the angles produced by the direction of the leads and the resulting electrocardiograms. Case I (222329) shows the inversion also involving Lead II, and is explained by an exaggeration of the incli-

nation of the cardiac axis to the right. The leads represent fixed planes of electrical potential, and changes in cardiac position or alterations in muscle bulk preponderance obviously affect the electrical currents, as expressed by the electrocardiograms.

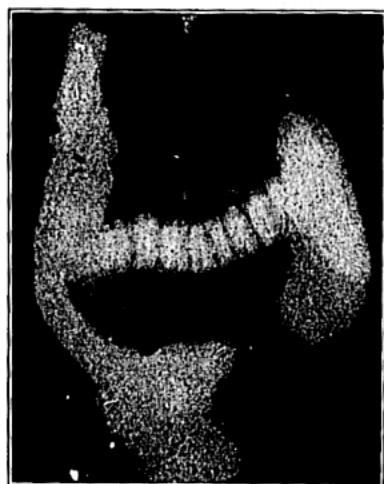


FIG. 9

It has been mentioned<sup>6</sup> that the *R* wave in Lead III becomes taller than in Lead II, but in these reported cases no constancy was

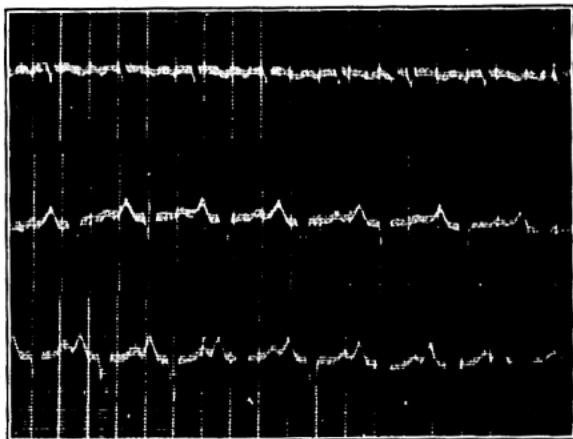
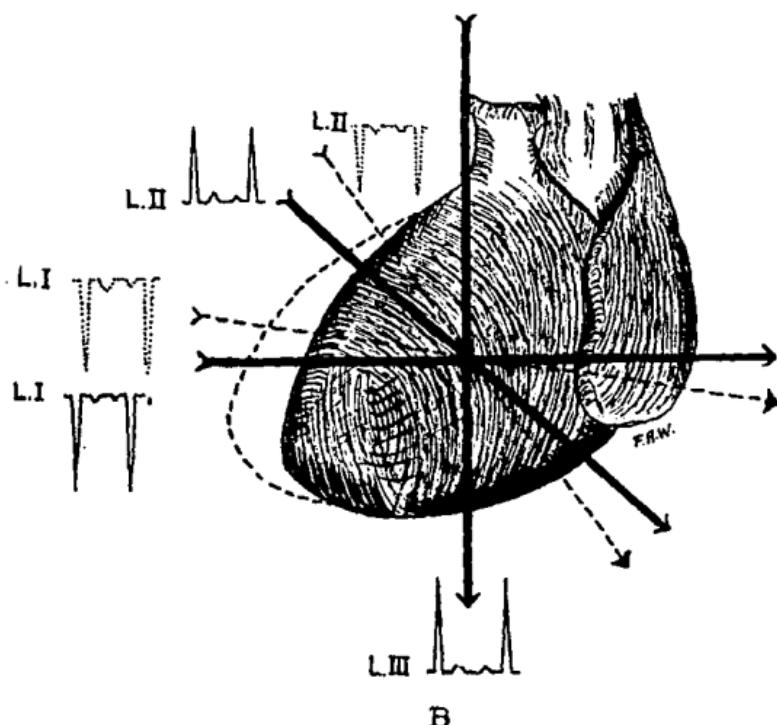
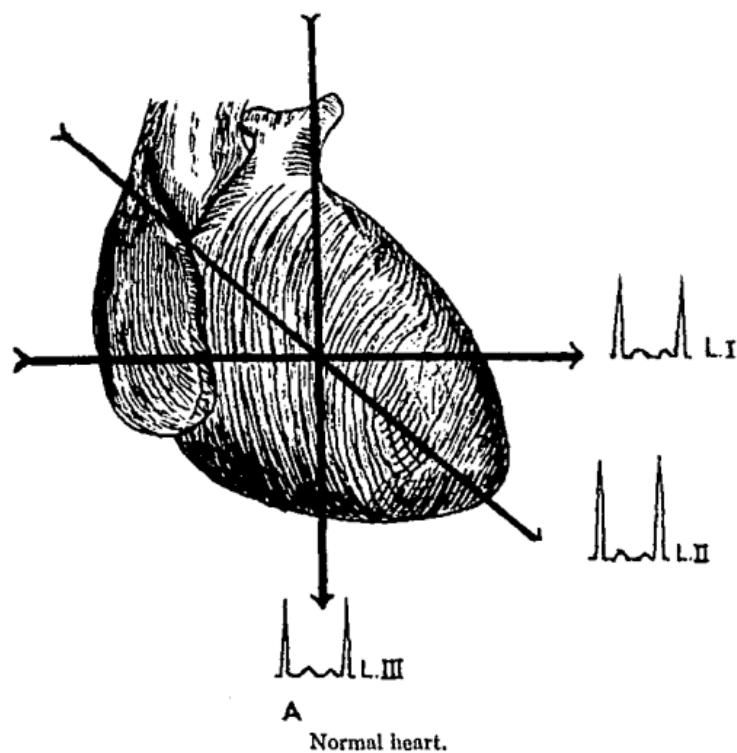


FIG. 10

observed. Hirschfelder mentions that the electrocardiographic curves sometimes are practically normal. Inversion of the deflections in Lead I is definite evidence of congenital dextrocardia with



Congenital dextrocardia.

FIG. 11.—Schematic representations showing the angles produced by the direction of the leads and the resulting electrocardiograms. The dotted lines in Fig. B show the inclination to the right exaggerated and the inversion affecting Lead II.

*situs transversus*, and we recognize electrocardiography as a valuable adjunct in the differential diagnosis of cardiac displacements.

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#### PROTOZOAL INFECTIONS OF THE INTESTINES:

WITH EMPHASIS ON THEIR INCIDENCE AND BEHAVIOR IN OTHER THAN TROPICAL REGIONS AND ON THE PATHOGENICITY AND TREATMENT OF CERTAIN OF THE FLAGELLATES.

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IN war time the environment of every military camp is menaced by the diseases that become epidemic among the troops.

That protozoal infections are not confined to the tropics we are having abundant evidence from the reported cases and studies by men in every part of the country. These parasites are of special interest at present on account of the movement of carriers, due to war activities, with the infection of new regions and new contacts. In the Philippines and in the Canal Zone amebic dysentery was one of the foremost foes of white men, soldiers or civilians. Sanitation and preventive medicine are doing much to stop the spread of this and of other protozoal infections, but they must still be looked upon as dangers to camp life and to the adjacent communities.

This is particularly true now that we know of the existence of carriers who need never have visited in Southern countries and in whom the infection seldom declares itself in a frank dysentery, so that they go about for years improperly treated unless their physician is exceptionally thorough in his investigations.